ECONOMIC ANALYSIS
OF CRITICAL HABITAT DESIGNATION
FOR THE DESERT YELLOWHEAD

March 2, 2004

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FOREWORD

A notice of availability of the draft economic analysis of critical habitat designation for the desert yellowhead (*Yermo xanthocephalus*) was published in the Federal Register on January 27, 2004. No comments specifically addressing the economic analysis were received during the public comment period (which ended on February 25, 2004). In addition, no new information concerning the species or the proposed critical habitat designation has come to light that might change the conclusions of the original draft analysis. Therefore, the draft economic analysis of the critical habitat designation for the desert yellowhead is re-submitted to the Service, unrevised, as the final analysis.

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ECONOMIC ANALYSIS OF CRITICAL HABITAT DESIGNATION FOR THE DESERT YELLOWHEAD

EXECUTIVE SUMMARY

Background

In March 2003, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat for the desert yellowhead (*Yermo xanthocephalus*) on approximately 360 acres in Fremont County, Wyoming. The entire designation is located on federally-owned land managed by the Bureau of Land Management (BLM).

Yermo xanthocephalus (Yermo)

Major Effects of the Proposed Rule

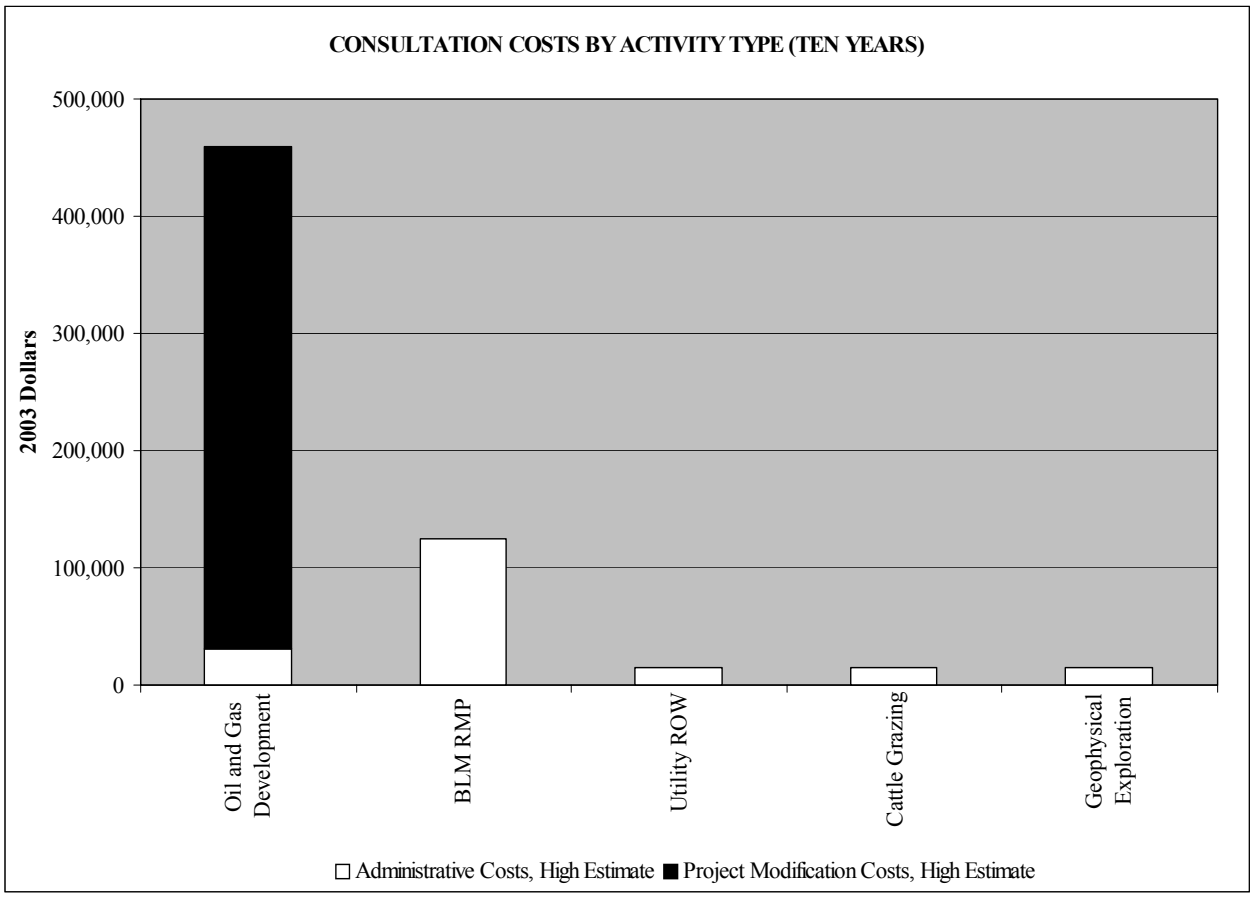
Federal agencies are required to consult with the Service under section 7 of the Endangered Species Act (Act) to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of a listed species' habitat. Activities potentially affected by this proposed designation of critical habitat include oil and gas extraction, geophysical oil and gas exploration, cattle grazing, utility right-of-way (ROW), and BLM activities. Impacts are defined in terms of both the anticipated number and effort level of future consultations as well as any associated project modifications taking place under section 7 of the Act. Consultations associated with oil and gas extraction activities are expected to comprise about 73 percent (approximately $460,000) of the total economic impact, and more than 90 percent of these costs (approximately $430,000) are expected to stem from the implementation of project modifications (i.e., directional well drilling). While the BLM estimates two consultations for oil and gas extraction activities during the next ten years, the existing lessee has no plans to drill within the lease areas during the remaining terms of each lease. Therefore, any future consultations for oil and gas development will occur after the current leases expire in 2006 and 2007.

TOTAL SECTION 7 COSTS ASSOCIATED WITH THE LISTING AND DESIGNATION OF CRITICAL HABITAT FOR YERMO (TEN YEARS)	
Cost 2003 Dollars:	***$530,000 to $630,000***
Present Value (7%):	***$310,000 to $520,000***
Annualized Cost:	***$44,000 to $75,000***

In addition to oil and gas extraction projects, activities potentially affected by the designation of critical habitat for Yermo are: review and revision of BLM's Lander Resource Management Plan (20 percent of total expected costs); cattle grazing (two percent); utility ROWs (two percent); and

geophysical oil and gas exploration (two percent). Of the total anticipated costs, four percent will be administrative costs borne by the Service (approximately $27,000), and 21 percent will be administrative and operational costs borne by the BLM (approximately $133,000). The remainder of the costs are expected to be borne by third parties (approximately $469,000).

The following table highlights the relative contribution of the affected land use activities to the cost of the listing and designation of critical habitat for Yermo over the next ten years.



Benefits Associated with the Proposed Rule

Although the economic analysis does not quantify the benefits arising from designation of critical habitat for Yermo, such benefits may include social welfare benefits of preserving endangered species; education/information; increased support for existing conservation efforts; and reduced uncertainty regarding the extent of Yermo habitat.

Small Business and Energy Industry Effects

A significant economic impact on a substantial number of small entities is not expected to result from the designation of critical habitat for Yermo. The energy industry will also not experience a significant adverse effect because of the designation.

Key Assumptions

The following table presents the key assumptions of this economic analysis, as well as the potential direction of the bias introduced by each assumption.

CAVEATS TO THE ECONOMIC ANALYSIS AND POTENTIAL DIRECTION OF INTRODUCED BIAS ON TOTAL SECTION 7 COSTS	
Key Assumption	**Effect on Cost Estimate**
Historic oil and gas well drilling activity near the proposed critical habitat area is a good predictor of future oil and gas development.	+++
Consultation costs associated with the revision of BLM's Lander Resource Management Plan are attributable to Yermo and not other listed species in the Lander Resource Area.	+++
There are no project modification costs associated with geophysical oil and gas exploration activities.	?
There is no opportunity cost associated with the withdrawal of the proposed critical habitat designation from future locatable mineral development.	?
- : This assumption may result in an underestimate of real costs. + : This assumption may result in an overestimate of real costs. ? : This assumption has an unknown effect on estimates.	

1. INTRODUCTION AND BACKGROUND

1. In March 2003, the U.S. Fish and Wildlife Service (the Service) proposed designation of critical habitat for the desert yellowhead (*Yermo xanthocephalus*) on approximately 360 acres in Fremont County, Wyoming. The purpose of this report is to identify and analyze potential economic impacts associated with the designation of critical habitat for the desert yellowhead (also known as Yermo). This report was prepared by Industrial Economics, Incorporated (IEc), under contract to the Service's Division of Economics.

2. Section 4(b)(2) of the Endangered Species Act (the Act) requires that the Service base the designation of critical habitat upon the best scientific and commercial data available, after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas as critical habitat, provided the exclusion will not result in extinction of the species.

3. Under the listing of a species, section 7(a)(2) of the Act requires Federal agencies to consult with the Service in order to ensure that activities they fund, authorize, permit, or carry out are not likely to jeopardize the continued existence of the species. The Service defines jeopardy as any action that would appreciably reduce the likelihood of both the survival and recovery of the species. For designated critical habitat, section 7(a)(2) also requires Federal agencies to consult with the Service to ensure that activities they fund, authorize, permit, or carry out do not result in destruction or adverse modification of critical habitat. Adverse modification of critical habitat is currently construed as any direct or indirect alteration that appreciably diminishes the value of critical habitat for conservation of a listed species.

1.1 Description of Species and Habitat[1]

4. Yermo is a perennial herb threatened by oil and gas development, mining, recreational off-road vehicle (ORV) use, cattle grazing and random natural events, as well as even small-scale habitat degradation, due to its small population size and limited geographic range. Yermo is currently known from a single population with plants scattered over an area of 50 acres.[2] It inhabits shallow wind-excavated hollows in soils derived from sandstones and limestones. Within the hollows, Yermo occurs on low slopes, rim margins, colluvial fans, and bottoms at elevations generally ranging from 6,720 to 6,760 feet. Yermo

[1]Information on the Desert Yellowhead and its habitat is taken from the *Proposed Designation of Critical Habitat for Yermo xanthocephalus (Desert Yellowhead).* Federal Register Vol. 68, No. 50 / Friday, March 14, 2003

[2]This population consists of one large subpopulation at the base of Cedar Rim and two small subpopulations within 0.25 miles. The total area occupied by the population is 8.33 acres.

grows to about 12 inches in height, and its yellow flowers are present from mid-June to August.

5. Based on field surveys and research, the Service has identified physical and biological habitat features, referred to as primary constituent elements, that are essential for the conservation and recovery of Yermo. Primary constituent elements for Yermo include:

- Recent shallow, coarse-loamy soils derived from sandstones and limestones, with little organic matter in the surface stratum and no accumulation of humus, clay, gypsum, salts, or carbonates in subsurface layers;

- Plant communities that support the appropriate associated species, including sparsely-vegetated cushion plant communities with scattered clumps of Indian Ricegrass (*Oryzopsis hymenoides*) between an elevation of 6,700 and 6,800 feet in Fremont County; and

- Topographic features/relief and physical processes, particularly hydrologic processes, that maintain the shape and orientation of the hollows characteristic of Yermo habitat and maintain moisture below the surface of the ground.

1.2 Proposed Critical Habitat[3]

6. The Service has proposed designation of one unit of critical habitat for Yermo on approximately 360 acres of Federal lands managed by the Bureau of Land Management (BLM) in the Beaver Rim area approximately 6 miles north of Sweetwater Station in southern Fremont County. This unit contains the only known location where Yermo currently occurs.

1.3 Framework for the Analysis

7. The primary purpose of this analysis is to estimate the economic impact associated with the designation of critical habitat for Yermo.[4] This information is intended to assist the Secretary in making decisions about whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation.[5] In

[3]Information on the Desert Yellowhead and its habitat is taken from the *Proposed Designation of Critical Habitat for Yermo xanthocephalus (Desert Yellowhead).* Federal Register Vol. 68, No. 50 / Friday, March 14, 2003.

[4]This analysis considers the effects of the regulatory action as proposed in the Federal Register on March 14, 2003 (68 *Federal Register* 12326, March 14, 2003).

[5]16 U.S.C. § 1533(b)(2).

addition, this information allows the Service to address the requirements of Executive Orders 12866 and 13211 and the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA).[6]

8. This section provides the framework for this analysis. First, it defines the economic effects considered in the analysis. Second, it establishes the baseline against which these effects are measured. Third, it describes the measurement of direct compliance costs, which include costs associated with, and generated as a result of, section 7 consultations. Fourth, it identifies potential indirect economic effects of the rule resulting from (1) compliance with other parts of the Act potentially triggered by critical habitat, (2) compliance with other laws, and (3) time delays and regulatory uncertainty. Fifth, it discusses the need for an economic assessment of the benefits of critical habitat designation. Finally, the section concludes by discussing the time frame for the analysis and the general steps followed in the analysis.

1.3.1 Types of Economic Effects Considered

9. This economic analysis considers both the economic efficiency and distributional effects. In the case of critical habitat designation, economic efficiency effects generally reflect the "opportunity costs" associated with the commitment of resources required to comply with the Act. For example, if the activities that can take place on a parcel of private land are limited as a result of a designation, and thus the market value of the land reduced, this reduction in value represents one measure of opportunity cost or change in economic efficiency. Similarly, the costs incurred by a Federal action agency to consult with the Service under section 7 represent opportunity costs of the designation.

10. This analysis also addresses how the impacts are distributed, including an assessment of any local or regional economic impacts and the potential effects on small entities and the energy industry. This information can be used by decision-makers to assess whether the effects of the designation might unduly burden a particular group or economic sector.

11. For example, while the designation may have a relatively small impact when measured in terms of changes in economic efficiency, individuals employed in a particular sector of the economy in the geographic area of the designation may experience relatively greater effects. The difference between economic efficiency effects and distributional effects, as well as their application in this analysis, are discussed in greater detail below.

[6]Executive Order 12866, "Regulatory Planning and Review," September 30, 1993; Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," May 18, 2001; 5 U.S.C. § 601 *et seq*; and Pub Law No. 104-121.

Efficiency Effects

12. At the guidance of the Office of Management and Budget (OMB) and in compliance with Executive Order 12866 "Regulatory Planning and Review," Federal agencies measure changes in economic efficiency in order to understand how society, as a whole, will be affected by a regulatory action.[7] In the context of this regulatory action, these efficiency effects represent the opportunity cost of resources used or benefits foregone by society as a result of critical habitat designation and other co-extensive regulations.[8] Economists generally characterize opportunity costs in terms of changes in producer and consumer surpluses in affected markets.[9]

13. In some instances, compliance costs may provide a reasonable approximation for the efficiency effects associated with a regulatory action. For example, a landowner or manager may need to enter into a consultation with the Service to ensure that a particular activity will not adversely modify critical habitat. The effort required for the consultation represents an economic opportunity cost, because the landowner or manager's time and effort would have been spent in an alternative activity had the parcel not been included in the designation. When compliance activity is not expected to significantly affect markets -- that is, not result in a shift in the quantity of a good or service provided at a given price, or in the quantity of a good or service demanded given a change in price -- the measurement of compliance costs can provide a reasonable estimate of the change in economic efficiency.

14. Where a designation is expected to significantly impact a market, it may be necessary to estimate changes in producer and consumer surpluses. For example, a designation that precludes the development of large areas of land may shift the price and quantity of housing supplied in a region. In this case, changes in economic efficiency can be measured by considering changes in producer and consumer surplus in the real estate market.

15. This analysis begins by measuring reasonably foreseeable compliance costs. As noted above, in some cases, compliance costs can provide a reasonable estimate of changes in economic efficiency. However, if the designation is expected to significantly impact markets, the analysis will consider potential changes in consumer and/or producer surplus in affected markets.

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[7]Executive Order 12866, "Regulatory Planning and Review," September 30, 1993; U.S. Office of Management and Budget, "Circular A-4," September 17, 2003.

[8]The term "co-extensive" is discussed in greater detail in Section 1.3.3.

[9]For additional information on the definition of "surplus" and an explanation of consumer and producer surplus in the context of regulatory analysis, see Gramlich, Edward M., *A Guide to Benefit-Cost Analysis (2nd Ed.)*, Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. Environmental Protection Agency, *Guidelines for Preparing Economic Analyses*, EPA 240-R-00-003, September 2000, available at http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html.

Distributional and Regional Economic Effects

16. Measurements of changes in economic efficiency focus on the net impact of the regulation, without consideration for how certain economic sectors or groups of people are affected. Thus, a discussion of efficiency effects alone may miss important distributional considerations concerning groups that may be disproportionately affected. OMB encourages Federal agencies to consider distributional effects separately from efficiency effects.[10] This analysis considers several types of distributional effects, including impacts on small entities; impacts on energy supply distribution and use; and regional economic impacts. It is important to note that these are fundamentally different measures of economic impact than efficiency effects, and thus cannot be added to or compared with estimates of changes in economic efficiency.

Impacts on Small Entities and Energy Supply, Distribution and Use

17. This analysis considers how small entities, including small businesses, organizations, and governments, as defined by the RFA, might be affected by critical habitat designation and other co-extensive regulations.[11] In addition, in response to Executive Order 13211 "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," this analysis considers the impacts of critical habitat on the energy industry and its customers.[12]

Regional Economic Effects

18. Regional economic impact analysis provides an assessment of the potential localized effects. Specifically, regional economic impact analysis produces a quantitative estimate of the potential magnitude of the initial change in the regional economy resulting from a regulatory action. Regional economic impacts are commonly measured using regional input/output models. These models rely on multipliers that mathematically represent the relationship between a change in one sector of the economy (e.g., hydroelectric power generation) and the effect of that change on economic output, income, or employment in other local industries (e.g., manufacturers relying on the electricity generated). These economic data provide a quantitative estimate of the magnitude of shifts of jobs and revenues in the local economy.

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[10]Office of Management and Budget, "Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations; Notice" 68 *Federal Register* 5492, February 3, 2003.

[11]5 U.S.C. § 601 *et seq.*

[12]Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," May 18, 2001.

19. The use of regional input/output models can overstate the long-term impacts of a regulatory change. Most importantly, these models provide a static view of the economy of a region. That is, they measure the initial impact of a regulatory change on an economy but do not consider long-term adjustments that the economy will make in response to this change. For example, these models provide estimates of the number of jobs lost as a result of a regulatory change, but do not consider re-employment of these individuals over time. In addition, the flow of goods and services across the regional boundaries defined in the model may change as a result of the designation, compensating for a potential decrease in economic activity within the region.

20. Despite these and other limitations, in certain circumstances regional economic impact analysis may provide useful information about the scale and scope of localized impacts. It is important to remember that measures of regional economic effects generally reflect shifts in resource use rather than efficiency losses. These types of distributional effects, therefore, should be reported separately from efficiency effects (i.e., not summed). In addition, measures of regional economic impact cannot be compared with estimates of efficiency effects.

1.3.2 Defining the Baseline

21. The purpose of this analysis is to measure the economic impact of compliance with the protections derived from the designation of critical habitat, including habitat protections that may be co-extensive with the listing of the species. Economic impacts to land use activities may exist in the absence of co-extensive protections. These impacts may result from, for example:

- Local zoning laws;
- State natural resource laws; and
- Enforceable management plans and best management practices applied by other State and Federal agencies.

Economic impacts that result from these types of protections are not included in this assessment; they are considered to be part of the "baseline." Existing laws, regulations, and policies are described in greater detail in Section 2.3 of this analysis.

1.3.3 Direct Compliance Costs Associated With Section 7 of the Act

22. The measurement of direct compliance costs focuses on the implementation of section 7 of the Act. This section requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out will not likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat. The administrative costs of these consultations,

along with the costs of project modifications resulting from these consultations, represent direct compliance costs.

23. This analysis does not differentiate between consultations that result from the listing of the species (i.e., the jeopardy standard) and consultations that result from the presence of critical habitat (i.e., the adverse modification standard). Consultations resulting from the listing of the species, or project modifications meant specifically to protect to the species as opposed to its habitat, may occur even in the absence of critical habitat. However, in 2001, the U.S. 10th Circuit Court of Appeals instructed the Service to conduct a full analysis of all of the economic impacts of critical habitat designation, regardless of whether those impacts are attributable co-extensively to other causes.[13] Given the similarity in regulatory definitions between the terms "jeopardy" and "adverse modification," in practice it can be difficult to pre-determine the standard that drives a section 7 consultation. Consequently, in an effort to ensure that this economic analysis complies with the instructions of the 10th Circuit as well as to ensure that no costs of the proposed designation are omitted, the potential effects associated with all section 7 impacts in or near proposed critical habitat are fully considered. In doing so, the analysis ensures that any critical habitat impacts that are co-extensive with the listing of the species are not overlooked.

1.3.4 Indirect Costs

24. A designation may, under certain circumstances, affect actions that do not have a Federal nexus and thus are not subject to the provisions of section 7 under the Act. The potential exists for several types of such indirect effects: three examples are discussed in this section. First, some landowners may voluntarily elect to complete a habitat conservation plan (HCP) in response to having their land designated as critical habitat. Second, some State laws may require landowners and managers to consider the effects of their actions on sensitive species and habitat. Thus, designation of critical habitat could trigger additional regulatory burden due to new information provided by the designation. Third, the consultation process may result in time delays for upcoming or ongoing projects, and the designation may foster regulatory uncertainty for prospective projects. The three most common categories of indirect effects are discussed further below.

Creation of Habitat Conservation Plans (HCPs)

25. No HCPs are proposed or currently exist within the boundaries of this proposed designation, because the entire proposed area is located on Federal land. Therefore, HCP-related costs are not an issue in this analysis. However, such costs may be a factor in other economic analyses of proposed critical habitat designations for other species, so this methodological discussion has been retained.

[13] *New Mexico Cattle Growers Ass'n v. U.S.F.W.S.*, 248 F.3d 1277 (10th Cir. 2001).

26. Under section 10(a)(1)(B) of the Act, a non-Federal entity (i.e., a landowner or local government) may develop an HCP for an endangered animal species in order to meet the conditions for issuance of an incidental take permit in connection with the development and management of a property.[14] The HCP intends to counterbalance potential harmful effects that a proposed activity may have on a species, while allowing the otherwise lawful activity to proceed. As such, the purpose of the habitat conservation planning process is to ensure that the effects of incidental take are adequately minimized and mitigated. Thus, HCPs are developed to ensure compliance with section 9 of the Act and to meet the requirements of section 10 of the Act.

27. However, a connection may exist between the creation of HCPs and the costs these plans impose and the designation of critical habitat. The Service, being a Federal entity, must formally consider whether an HCP will jeopardize a listed species or adversely modify its designated critical habitat before approving the plan. This review process may be a direct impact under section 7 of the Act. However, in certain circumstances, the effort involved in creating the HCP and associated conservation actions may also generate indirect effects associated with the designation of critical habitat. For example, in one past instance, landowners preemptively developed HCPs in an effort to avoid having their property designated as critical habitat.[15] In this case, the effort involved in creating the HCP and undertaking associated conservation actions were considered to be an effect of designation.

28. The following scenarios regarding HCP creation provide general guidance regarding the degree to which associated costs should be considered within the context of a critical habitat economic analysis:

- In cases in which an HCP existed prior to a proposed designation, the costs of developing the HCP and the added costs of management imposed by the HCP should not be considered in the analysis of the effects of the designation. These costs are appropriately considered to be part of the regulatory baseline, because their creation was driven by the listing of the species and the need to avoid take, which is prohibited under section 9 of the Act. However, in cases where designated critical habitat overlaps with completed HCPs, the economic analysis will need to consider the cost to the Service to re-consult on the plan's impact to critical habitat and whether or not this process may result in additional conservation actions.

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[14]U.S. Fish and Wildlife Service, "Endangered Species and Habitat Conservation Planning." From: http://endangered.fws.gov/hcp/, as viewed on August 6, 2002. Sections 9 and 10(a)(1)(B) of the Act do not apply to plants.

[15]See Industrial Economics, Incorporated, *Economic Analysis of Critical Habitat Designation for the Nine Bexar County Texas Invertebrate Species*, prepared for the U.S. Fish and Wildlife Service, March 3, 2003.

- In cases in which an HCP is proposed, or reasonably foreseeable absent the designation of critical habitat, the administrative costs associated with the required internal section 7 consultation should be included in the economic analysis of total section 7 costs, because the Service will need to consider the effects of the plan on designated critical habitat. In addition, if as a result of the designation additional project modifications will be recommended by the Service and incorporated into the HCP in order to avoid adversely modifying critical habitat, the costs of these project modifications should also be included in the economic analysis of critical habitat.[16]

- In cases in which development of one or more HCPs can be documented as being precipitated by critical habitat designation (i.e., to avoid designation or to reduce the costs of the designation), the costs of development of the HCP and the added costs of management imposed by the HCP should be included in the critical habitat economic analysis. In such cases the analysis should be presented with appropriate caveats as to the uncertainty regarding the extent to which the HCP would have existed absent critical habitat designation.

As previously stated, no current or proposed HCPs are located within the boundaries of this proposed designation, as the proposed habitat is located on Federal land.

Other State and Local Laws

29. Under certain circumstances, the designation of critical habitat may provide new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other State or local laws. In cases where these costs would not have been triggered "but for" the designation of critical habitat, they are included in this economic analysis. Because the desert yellowhead proposed designation is located entirely on Federal land, State and local laws do not apply. Therefore, costs resulting from the triggering of State and local laws are not anticipated.

[16]Project modification costs associated with the jeopardy standard are not considered for the following reason. Section 10(a)(2)(B) of the Act requires that for the issuance of an incidental take permit, the HCP must assure that "the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild." According to the Service's *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, "the wording of this criterion is identical to the "jeopardy" definition under the section 7 regulations (50 CFR Part 402.02)...Congress was explicit about this link, stating in the Conference Report on the 1982 ESA amendments that the Services will determine whether or not to grant a permit, "in part, by using the same standard as found in section 7(a)(2) of the ESA, as defined by the [Services'] regulations.'" (U.S. Department of the Interior and U.S. Department of Commerce, *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, November 4, 1996). As a result, during the HCP process, actions undertaken to meet the jeopardy provision of section 7 are also required under section 10 of the Act. Therefore, in circumstances where an HCP is reasonably foreseeable absent the designation of critical habitat, these actions are considered to be part of the baseline of this economic analysis.

30. Under other circumstances, one example where such costs may be incurred is for those designations located in California. The California Environmental Quality Act (CEQA) requires that lead agencies -- public agencies responsible for project approval -- consider the environmental effects of proposed projects that are considered discretionary in nature and not categorically or statutorily exempt. Among other effects, the CEQA statutes specifically require lead agencies to consider a project's effects on rare or endangered plant and animal communities. To approve qualifying projects, lead agencies must require applicants, who are not "categorically exempt," to mitigate effects to less than significant levels for projects that are not granted a "statement of overriding considerations."[17]

31. In some instances, the designation of critical habitat can have an indirect effect on CEQA-related requirements. This is most likely to occur in areas where the Federal designation provides clearer information on the importance of particular areas as habitat for a listed species. In addition, applicants who were "categorically exempt" from preparing an Environmental Impact Report under CEQA may no longer be exempt once critical habitat is designated. In cases where the designation triggers the CEQA significance test or results in a reduction of categorically exempt activities, associated costs are considered to be an indirect effect of the designation.

32. In these and other cases in which costs are incurred by landowners and managers above and beyond what would be required under State or local law and policy in the absence of the designation, these costs are considered to be an indirect effect of the designation. As stated above, because the desert yellowhead proposed critical habitat is located entirely on Federal lands, costs resulting from State and local laws are not anticipated.

Time Delays and Regulatory Uncertainty

33. In addition to the indirect effects of compliance with other laws triggered by the designation, project proponents, land managers and landowners may face additional indirect impacts. These can include costs due to project delays associated with the consultation process or compliance with other regulations, or, in the case of land location within or adjacent to the designation, loss in property values due to regulatory uncertainty, and loss in property values resulting from public perceptions regarding the effects of critical habitat. These categories of potential effects may exist, as consultations on grazing permits and other private activities on Federal land may be delayed or face uncertainty because of this proposal. These categories of potential effects are described in greater detail below.

[17] Article 19 of CEQA provides a list of categorical exemptions, which are descriptions of types of projects that usually do not have a significant effect on the environment (e.g., replacement or reconstruction of existing facilities, actions taken by regulatory agencies as authorized by State law or local ordinance to assure the maintenance, restoration, or enhancement of a natural resource.) (http://ceres.ca.gov/ceqa/flowchart/exemptions/categorical.html, as viewed on April 21, 2003.)

Time Delays

34. Both public and private entities may experience incremental time delays for projects and other activities due to requirements associated with the section 7 consultation process and/or compliance with other laws triggered by the designation. The need to conduct a section 7 consultation will not necessarily delay a project, as often the consultation may be coordinated with the existing baseline regulatory approval process. However, depending on the schedule of the consultation, a project may experience additional delays, resulting in an unanticipated extension in the time needed to fully realize returns from the planned activity. To the extent that delays result from the designation, they are considered in the analysis. Specifically, the analysis considers costs associated with any incremental time delays associated with section 7 consultation or other requirements triggered by the designation above and beyond project delays resulting from baseline regulatory processes.

Regulatory Uncertainty

35. The Service conducts each section 7 consultation on a case-by-case basis and issues a biological opinion on formal consultations based on species-specific and site-specific information. As a result, government agencies and affiliated private parties who need to consult with the Service under section 7 may face uncertainty concerning whether project modifications will be recommended by the Service and what the nature of these modifications will be. This uncertainty may diminish as consultations are completed and additional information becomes available on the effects of critical habitat on specific activities. However, a degree of regulatory uncertainty may persist. In some cases, this uncertainty may be incorporated by the project proponent into the costs of completing a proposed activity. For example, mining companies uncertain about potential restrictions to their activities in designated areas of critical habitat may lease mining rights at a reduced rate. Where appropriate, the analysis considers the potential costs associated with regulatory uncertainty.

Stigma

36. In some cases, the public may perceive that critical habitat designation may result in incremental changes to private property values, above and beyond those associated with anticipated project modifications and regulatory uncertainty described above. That is, the public may perceive that, all else being equal, a property that is designated as critical habitat will have lower market value than an identical property that is not within the boundaries of critical habitat. Public attitudes about the limits and costs that critical habitat may impose can cause real economic effects to the owners of property, regardless of whether such limits are actually imposed. This effect will not result from the desert yellowhead designation, because the proposed habitat is located entirely on Federal land.

1.3.5 Benefits

37. The published economics literature has documented that real social welfare benefits can result from the conservation and recovery of endangered and threatened species. Such benefits have also been ascribed to preservation of open space and biodiversity, both of which are associated with species conservation. Likewise, regional economies and communities can benefit from the preservation of healthy populations of endangered and threatened species, and the habitat on which these species depend.

38. In Executive Order 12866, OMB directs Federal agencies to provide an assessment of costs and benefits of a proposed regulatory actions.[18] However, in its guidance for implementing Executive Order 12866, OMB acknowledges that often, it may not be feasible to monetize, or even quantify, the benefits of environmental regulations.[19] Where benefits cannot be quantified, OMB directs agencies to describe the benefits of a proposed regulation qualitatively. This report provides insight into the potential economic benefits of critical habitat designation based on information obtained in the course of developing the economic analysis. It is not intended to provide a complete analysis of all of the benefits that could result from the designation. *Given these limitations, the Service believes that the benefits of critical habitat designation are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.*

1.3.6 Analytic Time Frame

39. The analysis examines activities taking place both within and adjacent to the proposed designation. It estimates impacts based on activities that are "reasonably foreseeable," including, but not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. Accordingly, the analysis bases estimates on activities that are likely to occur within a ten-year time frame, beginning on the day that the current proposed rule becomes available to the public. The ten-year time frame was chosen for the DEA because, as the time horizon for an economic analysis is expanded, the assumptions on which the projected numbers of projects are based become increasingly speculative. As a result, it is difficult to predict not only the numbers of projects, but also the cost estimates for the associated consultations, beyond a ten-year window. Consequently, any attempt to extend the economic analysis beyond the ten-year time window would be speculative.

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[18]Executive Order 12866, "Regulatory Planning and Review," September 30, 1993.

[19]U.S. Office of Management and Budget, "Circular A-4," September 17, 2003.

1.3.7 General Analytic Steps

40. This report relies on a sequential methodology and focuses on distilling the salient and relevant aspects of potential economic impacts. The steps followed in this analysis consist of:

- Describing current and projected economic activity within and around the proposed critical habitat area;
- Identifying whether such activities are likely to involve a Federal nexus;
- For activities with a Federal nexus, evaluating the likelihood that these activities will require consultations under section 7 of the Act and, in turn, result in any modifications to projects.
- Estimating the direct costs of expected section 7 consultations, project modifications and other economic impacts;
- Estimating the likelihood that current or future activities may require additional compliance with other Federal, State, and local laws as a result of new information provided by the proposed designation;
- Estimating the likelihood that projects will be delayed by the consultation process or other regulatory requirements triggered by the designation;
- Estimating the likelihood that economic activity will be affected by regulatory uncertainty, and/or property values affected;
- Estimating the indirect costs of the designation, as reflected in the cost of compliance with State and local laws, project delays, regulatory uncertainty, and effects on property values;
- Assessing the extent to which critical habitat designation and other co-extensive regulations will create costs for small businesses as a result of modifications or delays to projects;
- Assessing the effects of administrative costs and project modifications on the supply, distribution, and use of energy; and
- Determining the benefits that may be associated with the designation of critical habitat.

41. As noted above, this analysis considers both efficiency effects and distributional effects. It begins by considering direct compliance costs, as well as potential indirect effects,

such as those effects associated with project delays. Impacts on small entities and energy production and consumption are discussed separately, in Sections 2.6 and 2.7. Potential benefits of critical habitat are discussed qualitatively, in Section 3.

1.4 Information Sources

42. The methodology outlined above relies on input and information supplied by staff from the Service (Cheyenne Field Office), Bureau of Land Management (Wyoming State Office and Lander Field Office) and Wyoming Department of Transportation (Lander District Office). Information on land uses and the effects of section 7 were also received from Doug Thompson (Meyers Land and Cattle Co. and Fremont County Commissioner) and Stuart Garmaker (President, Cyanostar), individuals with leases and/or permits on the proposed critical habitat designation.

2. SECTION 7 IMPACTS

43. This section discusses key economic and demographic information for the area proposed as critical habitat for Yermo. In addition, the section provides a summary of the categories of economic impact associated with section 7 implementation for Yermo. This section then identifies the current land uses in or near proposed critical habitat that may be affected by section 7 implementation for Yermo. Importantly, these estimates include the effects of section 7 implementation for all activities associated with the proposed critical habitat area. As such, this section does not distinguish impacts that may be attributable co-extensively to the listing of Yermo from those impacts attributable solely to the critical habitat designation.

2.1 Socioeconomic Profile of the Critical Habitat Area

44. This section discusses key economic and demographic information for Fremont County, Wyoming. County-level data are provided as context for the discussion of potential economic impacts due to section 7 and to illuminate trends that may influence these impacts.

45. Critical habitat has been proposed in Fremont County, Wyoming. With a population of 35,804, Fremont County is the fourth largest county in the State, containing about seven percent of Wyoming's population (493,782 in 2000).[20] Since 1990, the County has grown in population by 6.4 percent, compared to a State growth rate of 8.9 percent and a national growth rate of 13.1 percent.[21]

46. Fremont County had a mean per capita personal income (PCPI) of $22,267 in 2000, which is 19 percent lower than the State average ($27,372) and 24 percent lower than the national average ($29,469).[22] Since 1990, the County PCPI has grown by 4.9 percent, exceeding both State and national growth rates (4.3 percent and 4.2 percent respectively).

47. The largest industries in the County in 2000, in terms of earnings, were Federal, State and local government (26.6 percent), services (25.7 percent), retail trade (11.6 percent), and construction (11.5 percent). Together, these industries account for more than 75 percent of the earnings in the County. These industries also employ approximately 75 percent of the full-time and part-time work force. Industry earnings and employment for Fremont County are presented in Exhibit 1.

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[20]Wyoming contains 23 counties.

[21]Population summaries are derived primarily from: U.S. Census Bureau, accessed at http://quickfacts.census.gov/qfd/index.html and http://www.census.gov/epcd/cbp/view/cbpview.html, April 2003, and U.S. Bureau of Economic Analysis, "Bearfacts: Wyoming, 1999-2000," accessed at http://www.bea.doc.gov/bea/regional/bearfacts/bf10/56/

[22]U.S. Bureau of Economic Analysis, "Bearfacts: Wyoming, 1999-2000."

Exhibit 1

EARNINGS AND EMPLOYMENT BY INDUSTRY
FREMONT COUNTY, WYOMING, 2000

Industry	Earnings $000s	Percent	Rate of Change Since 1990	Number of Jobs
Government and government enterprises	$121,474	26.6%	3.0%	3,974
Services	$117,419	25.7%	6.3%	6,123
Retail trade	$53,055	11.6%	4.5%	3,757
Construction	$52,655	11.5%	8.8%	1,893
Transportation and public utilities	$31,877	7.0%	3.6%	888
Mining	$26,769	5.9%	2.2%	643
Manufacturing	$17,859	3.9%	3.5%	813
Finance, insurance, and real estate	$17,310	3.8%	9.6%	1,130
Wholesale trade	$9,593	2.1%	1.5%	379
Agriculture	$5,424	1.2%	-4.6%	1,146
Agriculture services, forestry, fishing, and other	$2,783	0.6%	6.3%	370
TOTAL	$456,218	100%		21,116

Source: Bureau of Economic Analysis, Regional Accounts Data, accessed at:
http://www.bea.doc.gov/bea/regional/reis/default.cfm#s2

2.2 Categories of Economic Impacts Associated with Section 7 Implementation

48. The following section provides an overview of the categories of economic impacts that are likely to arise due to the implementation of section 7 in the geographic area proposed as critical habitat for Yermo.

2.2.1 Section 7 Consultations

49. Section 7(a)(2) of the Act requires Federal agencies (Action agencies) to consult with the Service whenever activities that they undertake, authorize, permit, or fund may affect a listed species or designated critical habitat. In some cases, consultations will involve the Service and another Federal agency only, such as the U.S. Army Corps of Engineers (USACE). Often, they will also include a third party involved in projects on non-Federal lands with a Federal nexus, such as private landowners conducting activities that require a Federal permit. In addition, Action agencies may engage in programmatic consultations to develop strategies to consider impacts to Yermo and its habitat at the program level, rather than at the individual project level. For example, the U.S. Environmental Protection Agency

(EPA) conducts programmatic consultations with the Service to consider endangered and threatened species when reviewing State water quality standards.

50. During a consultation, the Service, the Action agency, and if applicable, the third party applying for Federal funding or permitting communicate in an effort to minimize potential adverse effects to the species and/or to the proposed critical habitat. Communication between these parties may occur via written letters, phone calls, in-person meetings, or any combination of these. The duration and complexity of these interactions depends on a number of variables, including the type of consultation, the species, the activity of concern, the potential effects to the species and designated critical habitat associated with the proposed activity, and the parties involved.

51. Section 7 consultations with the Service may be either informal or formal. *Informal consultation*, which consists of discussions between the Service, the Action agency, and the third party concerning an action that may affect a listed species or its designated critical habitat, is designed to identify and remove potential impacts at an early stage in the planning process. By contrast, a *formal consultation* is required if the Action agency determines that the proposed action is likely to adversely affect a listed species or designated critical habitat in ways that cannot be resolved through informal consultation. Regardless of the type of consultation or proposed project, section 7 consultations can require substantial administrative effort on the part of all participants. The costs of these efforts are an important component of the impacts assessment.

52. Estimates of the cost of individual consultations were developed from a review and analysis of historical section 7 files from a number of Service field offices around the country. These files addressed consultations conducted for both listings and critical habitat designations. Cost figures were based on an average level of effort for consultations of low, medium, or high complexity, multiplied by the appropriate labor rates for staff from the Service and other Federal agencies. Estimates take into consideration the level of effort of the Service, the Action agency, and the applicant during both formal and informal consultations, as well as the varying complexity of consultations. Informal consultations are assumed to involve a low to medium level of complexity. Formal consultations are assumed to involve a medium to high level of complexity.

53. Section 7 consultation costs include the administrative costs associated with conducting the consultation, such as the cost of time spent in meetings, preparing letters, and in some cases, developing a biological assessment or biological opinion. Biological assessments (BAs) are prepared to determine whether proposed projects, and in some cases their alternatives, are likely to adversely affect the listed species or designated critical habitat. Biological assessments include a survey of the literature, a detailed discussion of the effects of the action and listed species or critical habitat, and findings based on this information.

54. Per-unit costs associated with formal consultations and informal consultations are presented in Exhibit 2. Unless otherwise stated, this table is used to develop total administrative costs for consultations associated with activities within proposed critical habitat for Yermo.

Exhibit 2

ESTIMATED ADMINISTRATIVE COSTS OF CONSULTATION AND TECHNICAL ASSISTANCE EFFORTS FOR YERMO (PER EFFORT)[a]

Critical Habitat Impact	Scenario	Service	Action Agency	Third Party	Biological Assessment[b]
Informal Consultation[c]	Low	$1,000	$1,300	$1,200	$0
	High	$3,100	$3,900	$2,900	$5,375
Formal Consultation	Low	$3,100	$3,900	$2,900	$5,375
	High	$6,100	$6,500	$4,100	$30,000 to $50,000

[a] Low and high estimates primarily reflect variations in staff wages and time involvement by staff.

[b] The cost of a biological assessment for a high level informal consultation and a low level formal consultation is based on the cost of BLM Lander Field Office's current subcontracted BA. The cost of a biological assessment for a high level formal consultation is based on a BLM Lander Field Office's estimate. **A third party is assumed to bear the cost of a biological assessment.** When no third party is involved, the Action Agency bears the cost, and the bearing of this cost varies from agency to agency.

[c] Internal consultations are approximately the same cost as informal consultations, unless indicated otherwise. For internal consultations, the Service bears the costs normally borne by both the Service and the Action Agency.

Sources: IEc analysis based on data from the Federal Government General Schedule Rates, Office of Personnel Management, 2002, a review of consultation records from several Service field offices across the country, and communications with Biologists in the Service and personnel from the BLM Lander Field Office.

2.2.2 Project Modifications

55. The section 7 consultation process may involve some modifications to a proposed project. Projects may be modified in response to voluntary conservation measures suggested by the Service during the *informal* consultation process in order to avoid or minimize impact to a species and/or its habitat, thereby removing the need for formal consultation. Alternatively, *formal* consultations may involve modifications that are agreed upon by the Action agency and the third party and included in the project description as avoidance and minimization measures, or included in the Service's biological opinion on the proposed action as discretionary conservation recommendations to assist the Action agency in meeting their obligations under section 7(a)(1) of the Act.[23]

[23] Section 7(a)(1) requires Federal agencies to utilize their authorities to further the purposes of the Act by carrying out programs for the conservation of listed species.

56. In some cases, the Service may determine that the project is likely to jeopardize the continued existence of the species and/or destroy or adversely modify its designated critical habitat. In these cases the Service will provide the Action agency with reasonable and prudent alternatives (RPAs) that will keep the action below the thresholds of jeopardy and/or adverse modification. An RPA is an alternative that: (1) can be implemented in a manner consistent with the intended purpose of the action; (2) can be implemented consistent with the scope of the Action agency's legal authority and jurisdiction; and (3) is economically and technologically feasible. These RPAs are typically developed by the Service in cooperation with the Action agency and, when applicable, the third party. Alternatively, the Action agency can develop its own RPAs, or seek an exemption for the project. All of these project modifications have the potential to represent some cost to the Action agency and/or the third party. In certain instances, these modifications can lead to broader regional economic impacts.

2.2.3 Regional Economic Impacts

57. The consultation process and related project modifications could directly affect the operations of entities in some industries (e.g., oil and gas development), with secondary impacts on the suppliers of goods and services to these industries, as well as purchasers of productions from these industries. For example, modified or decreased oil and gas development activities could affect businesses providing drilling equipment and supplies. Thus, project modifications or other restrictions that engender cost and revenue impacts involving commercial enterprises can have a subsequent detrimental effect on other sectors of the local economy, especially when the affected industry is central to the local economy. Industries within a geographic area are interdependent in the sense that they purchase output from other industries and sectors, while also supplying inputs to other businesses. Therefore, direct economic effects on a particular enterprise can affect regional output and employment in multiple industries.

58. There are many methods available for conducting economic impact assessments, depending on the particular policy interests and goals of the economic analysis. Use of an input-output (I-O) model, such as IMPLAN, to gauge the direction and magnitude of regional economic impacts is useful in situations where the critical habitat designation may affect the commercial economy of a specific geographic area. However, I-O modeling is not appropriate for all economic impact analyses associated with critical habitat areas and can result in misinterpretations and biased conclusions if used inappropriately. I-O models are appropriate when the following factors are present: (1) economic impacts of the proposed designation are substantial and clearly defined in the analysis; (2) impacts have a clear effect on one industry or groups of industries prevalent in the geographic region; and (3) substitution possibilities for the focal economic input or activity are not widely available.

59. A regional economic analysis was not performed for this economic analysis as, due to the nature of the activities affected by this designation, section 7 consultation and

associated project modifications are unlikely to measurably reduce the level of economic activity.

2.2.4 Uncertainty

60. The outcome of section 7 consultations are by their nature uncertain. The Service conducts each consultation on a case-by-case basis and issues biological opinions and associated project modification requirements based on species-specific and site-specific considerations. While some differences in project modification requirements are clearly linked to habitat quality and other determinable factors, an element of uncertainty remains. The costs estimated in this section considered the economic costs associated with the typical expected project modifications. While these represent the range of economic costs, costs for individual projects will fluctuate above and below this level. This analysis does not quantify uncertainty beyond estimating the likely upper bound of costs for these typical project modifications.

2.3 Activities Potentially Affected by Section 7

61. The BLM is the main Action agency that carries out, permits, or funds activities and projects in or adjacent to the proposed critical habitat area for Yermo. These activities may lead to section 7 consultation with the Service, and in some cases specific projects may be modified in order to protect Yermo and/or its habitat. This analysis predicts that oil and gas development will be the activity most impacted by section 7 implementation, followed by programmatic consultation on the BLM's Lander Resource Management Plan (RMP), grazing, geophysical exploration, rights of way (ROWs) and mining.

62. This section examines and quantifies the potential effects of section 7 on these activities. The discussion includes a description of the activity, how the activity would be affected, the number of expected section 7 informal and formal consultations and the associated administrative and project modification costs by activity in the proposed critical habitat unit. The section also identifies and discusses those activities unlikely to incur section 7 impacts. These activities include, recreation, road construction and maintenance, landownership adjustments and wild horse management.

2.3.1 Oil and Gas Development

63. The last oil or gas well drilled on the proposed designation was drilled in 1952. The result was a dry hole, and the oil well was abandoned in 1953.[24] Two active oil and gas leases currently encompass the area proposed as critical habitat. The lessees for both leases are the Ceja Corporation (75 percent interest) and Cyanostar Energy, Inc. (the remaining 25

[24]Individual Well Record, Form 9-593, United States Department of the Interior, Geological Survey, Conservation Division, January 12, 1953.

percent interest). The lease terms are ten years, unless drilling activity results in a producing well, then the lease terms are tied to the producing life of the well. There are no producing oil or gas wells that meet the lease holding requirements for these two active leases.[25] The first lease (WYW138846) expires on April 30, 2006, and the second lease (WYW140702) expires on January 31, 2007. While the leases contain timing limitation stipulations (TLS) to protect big game winter range and sage grouse and raptor nesting habitat, and controlled surface use (CSU) stipulations to protect sage/sharp-tailed grouse breeding habitat, the leases do not include specific stipulations that protect Yermo.[26]

64. BLM oil and gas leases do not authorize drilling activity. Drilling activity on a lease is authorized by the BLM through an Application for Permit to Drill (APD). The leases that encompass the proposed critical habitat area contain one active APD for a gas well (Beaver Rim Federal #1-33 in lease WYW140702) located 3/4 mile west of the proposed critical habitat. The APD was signed on August 26, 2002.[27]

65. The BLM consulted with the Service on a prior APD for this well (Beaver Rim Federal #1-33), and on another APD for a well located one mile north of the proposed critical habitat, in 1997. There was one consultation for the two wells. The consultation was informal, and there was no BA.[28] These wells were permitted in 1998 and given two one-year extensions (the BLM did not consult the Service on the extensions), which expired in 2001. In 2001, an APD was submitted for drilling the well (Beaver Rim Federal #1-33) as originally proposed in 1998. The Service was contacted at the time of application, and it was recommended that if BLM applied the same mitigation measures used previously, no formal consultation would be necessary. Mitigation measures recommended by the Service included (1) a seasonal restriction on well development activities during the summer flowering and fruiting season; and (2) a requirement that a Pesticide Use Proposal be submitted for evaluation and approval before herbicides could be used for weed management.

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[25]BLM Lander Field Office visit with Jack Kelly (Field Manager), Connie Breckenridge (Wildlife Biologist/GIS Coordinator), Fred Georgeson (Geologist), Bill Bartlett (Realty Specialist) and USFWS Cheyenne Field Office Biologist, January 10, 2003.

[26]United States Department of the Interior, Bureau of Land Management, Offer to Lease and Lease for Oil and Gas, Serial No. W-138846 dated April 17, 1996, and Serial No. W-140702 dated January 21, 1997.

[27]BLM Lander Field Office visit, January 10, 2003. Personal communication with Connie Breckenridge (Wildlife Biologist/GIS Coordinator), BLM Lander Field Office, January 21, 2003.

[28]Personal communication with Connie Breckenridge (Wildlife Biologist/GIS Coordinator), BLM Lander Field Office, January 21, 2003.

66. The same mitigation measures were applied to this APD as were in the conditions of approval on the APD approved in 1998, and the well authorized by this APD was drilled in September 2002.[29] The company drilled to 2,500 feet, and the result was a dry hole.[30]

Baseline

67. The proposed critical habitat designation is located within the Beaver Creek Management Unit of the Lander RMP, and the proposed designation is rated as having a low potential for oil and gas.[31] As required, every action the BLM Lander Field Office takes on the proposed designation must conform to the Lander RMP, and the RMP states that all oil and gas leases in the Beaver Creek Management Unit rated as having moderate, low or no potential for the occurrence of oil and gas reserves will include a no-surface-occupancy (NSO) restriction to protect threatened and endangered species.[32] Therefore, even though the leases do not specifically protect Yermo and its habitat, the RMP prohibits surface occupancy when necessary to protect the existing Yermo population. However, the BLM only has the authority to relocate proposed operations a distance of 200 meters to protect threatened and endangered species.[33] This 200 meter buffer only protects about 10 acres of the proposed critical habitat (360 acres).[34] To exclude surface occupancy by more than 200 meters would require that BLM conduct a NEPA review, which would involve a section 7 consultation with the Service. Therefore, any NSO restriction within the 200 meter buffer area results from a general BLM policy to protect endangered and threatened species and is, therefore, independent of the designation. Any NSO restriction outside the 200 meter buffer area, however, would most likely result in section 7 costs.

68. The APD approved in 2002 maintains the same weed control and pesticide use stipulations originally approved in 1997, in accordance with guidelines established by Federal, State and local authorities.[35] Because these weed control and pesticide use conditions pre-date the listing of the Yermo in 2002, the restrictions are considered to be independent from the listing and designation of critical habitat for the Yermo.

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[29]BLM Lander Field Office visit, January 10, 2003.

[30]Personal communication with Stuart Garmaker (President), Cyanostar, February 3, 2003.

[31]Personal communication with Stuart Cerovski (Petroleum Engineer), BLM Lander Field Office, January 23, 2003.

[32]Lander RMP Record of Decision (1987), pg. 32.

[33]43 CFR § 3101.1-2 Surface use rights. Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, April 11, 2003.

[34]200 square meters is equivalent to approximately 10 acres.

[35]Brower Oil & Gas Co. APD WYW140702.

69. The APD also contains specific stipulations to protect Yermo during the plant's flowering and fruiting season; prohibiting surface disturbing activities from June 15 through August 15. While these costs are attributable to section 7, the APD also prohibits surface disturbing activities until July 31 to protect sage grouse nesting habitat.[36] The sage grouse is a game species that is not listed under the Act as threatened or endangered. BLM's policy of prohibiting surface disturbing activities between June 15 and July 31 protects an un-listed species and would remain in effect absent the listing or designation of critical habitat for the Yermo. As such, this prohibition is part of the baseline. Therefore, the additional project delay attributable to section 7, beyond the baseline delay, is two weeks. The cost of this dely is considered nominal and is not quantified.

Future Consultations

70. Any new oil and gas leases will be issued with NSO stipulations following the expiration of the existing leases. The NSO stipulations contained in the new leases will take into account the proposed designation, but the leases will not require NEPA review since the NEPA review was done previously for the EIS in support of the RMP.[37] BLM policy is not to consult with the Service on oil and gas leases because the leases do not authorize activity. While the Service disagrees with this policy, the Service does not anticipate consulting with BLM during the next 10 years on the two oil and gas leases that encompass the proposed critical habitat area when the leases expire.[38]

71. The BLM does coordinate and consult with the Service on APDs, because APDs are the vehicle that authorize activity on an active lease. The BLM estimates it will initiate two consultations with the Service for APDs for oil and gas wells located nearby the proposed critical habitat designation.[39] This is based on: (1) the number of APDs for wells located nearby the proposed critical habitat area during the past 10 years; (2) the recent informal consultation history with the Service on APDs for wells located nearby the proposed critical habitat area; and (3) the fact that the proposed critical habitat area is rated as having a low to moderate potential for the occurrence of oil and gas reserves.[40] It is likely a BA would be

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[36]Brower Oil & Gas Co. APD WYW140702.

[37]Personal communication with Ed Womak (Assistant Field Manager, Minerals and Land), BLM Lander Field Office, April 15, 2003.

[38]BLM Lander Field Office visit, January 10, 2003.

[39]BLM Lander Field Office visit, January 10, 2003. While the BLM estimates two consultations for APDs during the next ten years, the existing lessee has no plans to drill within the lease area in the future (personal communication with Stuart Garmaker (President), Cyanostar, February 3, 2003). However, because the leases expire in 2006 and 2007, it is possible that a future lessee may apply for an APD. To be conservative (i.e., more likely to overstate impacts than understate them), this analysis assumes two consultations during the next ten years.

[40]Personal communication with Stuart Cerovski (Petroleum Engineer), BLM Lander Field Office, January 23, 2003.

required.[41] Using the administration costs for a high level informal consultation and the BLM's actual cost for its current BA for the Lander RMP results in a total administration cost estimate for two APD-related section 7 consultations of $31,000; $6,000 in Service costs, $8,000 in BLM costs and $17,000 in third party costs.[42]

Project Modifications

72. Because oil and gas extraction operations are likely to adversely affect the Yermo population and the proposed critical habitat, BLM plans to exclude the proposed critical habitat area from drilling activities. When they renew, the leases will be offered with a NSO stipulation for the proposed critical habitat area.[43] Until this time, the BLM will approve APDs on the proposed designation (outside of the 200 meter buffer area) with stipulations to protect the Yermo population and the proposed designation.[44] Given the size of the proposed designation, likely stipulations will require that lessees access oil or gas resources located beneath the surface of the proposed designation with wells drilled outside the boundaries of the buffer area. When the leases renew with NSO stipulations, the restricted drilling area will increase to incorporate the entire designation; pushing wells outside the boundaries of the proposed designation.[45]

73. Current technology uses directional drilling to access oil or gas beneath an area not accessible by vertical drilling, and costs an additional $13,000 to $15,000 per day. The additional cost of directional drilling depends on well depth; the deeper the well, the longer the drilling time. The current lessee drilled a vertical well west of the proposed critical habitat designation in September 2002. This well was drilled to a depth of 2,500 feet and took seven days. Directional drilling would have increased the cost of this well by

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[41]Personal communication with USFWS Cheyenne Field Office Biologist, February 4, 2003.

[42]The BLM subcontracted the BA for Yermo and the BAs for three other listed species at a cost of $21,500, or about $5,375 per species if costs are allocated equally. Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003. See Exhibit 2.

[43]Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

[44]Since 1998 (after these leases were signed), the BLM has applied CSU stipulations to new oil and gas leases or oil and gas leases under review. The CSU stipulation gives the authorized officer (usually the BLM field manager) the authority to restrict or prohibit any activity unless the operator and BLM arrive at an acceptable plan for mitigation of anticipated impacts. These CSU stipulations specifically address threatened and endangered species and their habitats, and provide the BLM the authority to modify or disapprove a proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed species or result in the destruction or adverse modification of a designated or proposed critical habitat.

[45]"Directional drilling (or 'extended drilling') is a technology that can be employed to reach subsurface targets not located directly underneath the drill site." Source: Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and Reserves and the Extent and Nature of Restrictions or Impediments to their Development, prepared by the United States Department of the Interior, Agriculture and Energy, January 2003, pg. A7-5.

approximately $91,000 to $105,000.[46] Another well drilled west of the proposed designation in 1959 was drilled to a depth of 5,473 feet, and a well drilled on the proposed designation in 1952 was drilled to a depth of 7,343 feet.[47] Based on the time it took to drill the well in September 2002, it would take approximately 14 days to drill a well 5,105 feet deep, the average depth of the three wells located on or nearby the proposed critical habitat designation. Directional drilling would increase the cost of this average well by approximately $186,000 to $214,000. Using this average well as a proxy for two wells drilled in or nearby the proposed designation, project modifications (directional drilling) will cost the third party $372,000 to $428,000 during the next ten years. While the BLM estimates two consultations for oil and gas extraction activities during the next ten years, the existing lessee has no plans to drill within the lease areas during the remaining terms of each lease. Therefore, any future consultations for oil and gas development will occur after the current leases expire in 2006 and 2007.

2.3.2 Lander Resource Management Plan

74. The current BLM Lander RMP, which covers the proposed critical habitat designation for Yermo, was approved in 1987, three years prior to the species' discovery. The BLM is currently consulting with the Service to assess whether management decisions in the RMP affect Yermo and the proposed critical habitat designation.[48] While the consultation is informal, the activities do include the preparation of a BA. Once the BA is finalized, the BLM will enter formal consultation with the Service. This consultation is purely administrative; no project modifications are anticipated.[49] The BLM estimates the BA will cost approximately $30,000 to $50,000.[50] Using the administration costs for a high level formal consultation and the BLM's cost estimate for the BA results in a total cost estimate for this section 7 consultation of $43,000 to $63,000; $6,000 in Service costs and $37,000

[46]Personal communication with Stuart Garmaker (President), Cyanostar, February 3, 2003.

[47]http://wogra.wygisc.uwyo.edu/wyoims2/wims2bwogra.html

[48]Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, April 21, 2003. Personal communication with USFWS Cheyenne Field Office Biologist, March 28, 2003.

[49]Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, January 16, 2003.

[50]Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

to $57,000 in BLM costs.[51] The BLM expects to complete these consultation activities prior to the designation of critical habitat.[52]

Future Consultations

75. In addition to the on-going consultation, the BLM anticipates completing one additional, formal consultation regarding the RMP. By 2004, the BLM will begin revising the entire Lander RMP. When complete, the BLM will formally consult with the Service to assess whether management decisions in the revised RMP affect threatened and endangered species and designated habitat in the Lander Resource Area, including Yermo and its designated critical habitat.[53] The formal consultation is expected to occur sometime in 2005 or 2006. Because the consultation will address all threatened and endangered species and all designated critical habitat, it will be complex.[54] The BLM estimates the BA will cost approximately $30,000 to $50,000.[55] To be conservative (i.e., more likely to overstate impacts than understate them), this analysis assumes the formal consultation for the Lander RMP revision, including the BA, is attributable solely to Yermo. Using the administration costs for a high level formal consultation and the BLM's cost estimate for the BA results in a total cost estimate for this section 7 consultation of $43,000 to $63,000; $6,000 in Service costs and $37,000 to $57,000 in BLM costs.[56]

2.3.3 Grazing

76. The proposed critical habitat area is encompassed by the Big Pasture Grazing Allotment (allotment number 1703). The allotment contains 74,351 acres of BLM land and 5,373 acres of State and private land.[57] Seven grazing permits have been issued for the grazing allotment. The permits have been issued to: Meyers Land and Cattle Co. (Doug

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[51]See Exhibit 2.

[52]BLM Lander Field Office visit, January 10, 2003. Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, January 16, 2003. Personal communication with USFWS Cheyenne Field Office Biologist, March 28, 2003.

[53]Other threatened and endangered species include the lynx, grizzly bear, bald eagle, wolf, Ute ladies'-tresses, and black-footed ferret (and mountain plover if it is listed in September). Personal communication with USFWS Cheyenne Field Office Biologist, March 28, 2003.

[54]BLM Lander Field Office visit, January 10, 2003. Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, January 16, 2003.

[55]Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

[56]See Exhibit 2.

[57]Lander RMP Grazing Supplement, Final Environmental Impact Statement (1986), pg. 21.

Thompson), Ralph and Charlotte Alley, Graham Ranches, Jack Corbett, Lee Whitlock, Robert Crofts, and Tim Thielen. Each permit allows the permittee to graze a specified number of AUMs anywhere within the common grazing allotment from May 1 to November 7. The permit terms are 10 years, and the permits do not include specific stipulations to protect the Yermo population or the proposed critical habitat.[58]

Baseline

77. The existing BLM grazing management strategy within the proposed designation is to allow normal intensive grazing activity. The BLM has also requested that permittees avoid management activities that attract livestock to and congregate livestock in the vicinity of the Yermo population. To this date, the permittees have cooperated with BLM to minimize the effects and impacts of grazing on the Yermo population. The activities that permittees modified to accomplish this include: (1) no mineral supplements in the vicinity of the Yermo population; (2) no supplemental feeding in the vicinity of the Yermo population; (3) no trailing or herding cattle in the vicinity of the Yermo population; and (4) no rangeland improvements (e.g. water wells or reservoirs) that would attract livestock to the Yermo site.[59] Although these activity modifications are already being undertaken voluntarily, making these modifications legally-binding as a result of a section 7 consultation would normally be considered coextensive with the designation.

Future Consultations

78. Because grazing is likely to adversely affect the Yermo population and the proposed critical habitat area, the BLM will formally consult with the Service on the renewal of the seven grazing permits. However, rather than initiate a formal consultation for each grazing permit individually, the BLM plans to group the permits together and consult with the Service once (on the group).[60] The BLM is not certain when the group permit renewal would occur, but expects there would only be one formal consultation with the service for grazing permits during the next ten years.[61] Using the administration costs for a low level formal

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[58]BLM Lander Field Office visit, January 10, 2003. Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003.

[59]BLM Lander Field Office visit, January 10, 2003. Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003. Personal communication with Doug Thompson, Meyers Land and Cattle Co. and Fremont County Commissioner, January 21, 2003.

[60] The permit for Theilen expires on February 28, 2004, the permit for Crofts expires on March 1, 2005, the permits for Myers Land and Cattle Co. (Thompson), Corbett, Whitlock and Graham expire on February 28, 2011, and the permit for Alley expires on January 14, 2012. While the individual permits expire on different dates, language in the existing permits allow the BLM to renew permits early. Source: Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003 and January 24, 2003.

[61]Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003.

consultation and the BLM's actual cost for the current BA results in a total administration cost estimate for this section 7 consultation of $15,000; $3,000 in Service costs, $4,000 in BLM costs and $8,000 in costs for the 7 permittees (average of approximately $1,000 per permittee).[62]

Project Modifications

79. Yermo does not appear to be palatable to livestock. While the Service believes a low level of adverse affect is occurring (e.g., trampling of Yermo individuals), and has the potential to increase in the future, current livestock stocking levels may actually benefit the Yermo population and the proposed critical habitat area. Therefore, BLM and Service personnel agree that the proposed critical habitat area should remain unfenced, and that livestock grazing should be allowed to continue at current permitted levels.[63]

80. Absent the voluntary activity modifications currently practiced by the permittees at the Yermo site, high concentrations of livestock are not likely to occur in the proposed designation; the terrain Yermo grows in is often steep, the closest water source is about 2.5 miles away, and the lack of other desirable forage species where Yermo prefers to grow are disincentives for livestock to congregate at the site.[64] Therefore, to avoid management practices that increase livestock numbers in the proposed critical habitat, it is likely the renewed grazing permits will include stipulations similar to those currently practiced by the permittees.[65]

81. Each of the current voluntary stipulations prohibit the permittee from practicing a management activity not practiced before Yermo was listed. Consequently, there are no project modification costs that are considered to be coextensive with the designation because there is no change from current behavior (i.e., agreeing not do something that was not being done in the first place).[66]

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[62]See Exhibit 2.

[63]BLM Lander Field Office visit, January 10, 2003. Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003.

[64]BLM Lander Field Office visit, January 10, 2003. Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003.

[65]Personal communication with Roy Packer (Rangeland Management Specialist), BLM Lander Field Office, January 16, 2003.

[66]Personal communication with Doug Thompson, Meyers Land and Cattle Co. and Fremont County Commissioner, January 21, 2003.

2.3.4 Geophysical Oil and Gas Exploration

82. While exploration for oil and gas has not occurred in the proposed critical habitat designation during the past 20 years, geophysical exploration has been proposed in an area four miles north and east of the proposed designation using new three dimensional technology (vibroseis), and the BLM believes there is a potential for seismic exploration to occur in the proposed designation during the next ten years.[67]

Future Consultations

83. Geophysical exploration is not considered a leasehold development action, it is considered a surface use action. As such, the company or individual conducting the geophysical operations can explore BLM land without holding the oil and gas lease. The geophysical operator must file a notice of intent for geophysical operations with the BLM, but the BLM can authorize the notice of intent with stipulations that protect Yermo and the proposed designation.[68] The BLM anticipates initiating one informal consultation with the Service during the next ten years for geophysical operations located in the proposed critical habitat area. It is likely a BA would be required because of dust and other concerns.[69] Based on the administration costs for a high level informal consultation and the BLM's actual cost for the current BA, the total administration cost estimate for this section 7 consultation is $15,000; $3,000 in Service costs, $4,000 in BLM costs and $8,000 in third party costs.[70]

Project Modifications

84. The BLM will approve any notice of intent for geophysical operations with stipulations that protect the Yermo population and its habitat. Likely stipulations would exclude the energy source (i.e., explosives) from inside the boundaries of the proposed designation, and require hand placement of cables and receiver phones within the proposed designation.[71]

85. Current geophysical technology (two and three dimensional) uses a grid of cables and receiver phones to record signals from an energy source. The energy source, usually an

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[67]BLM Lander Field Office visit, January 10, 2003. Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

[68]Personal communication with Stuart Cerovski (Petroleum Engineer), BLM Lander Field Office, January 23, 2003.

[69]BLM Lander Field Office visit, January 10, 2003. Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

[70]See Exhibit 2.

[71]Personal communication with Fred Georgeson (Geologist), BLM Lander Field Office, January 22, 2003.

explosive, is "shot" at regular intervals. To exclude shot points from the proposed designation necessitates skipping intervals, which moves the energy source further away from the cables and receiver phones. This results in a weaker signal and could result in lower quality data. There are no exploration alternatives that protect both the Yermo population and the proposed critical habitat and gather data similar in quality to data collected from unmodified vibroseis exploration.[72] While poorer data is a cost, it is not a measurable cost, and is not quantified in this analysis.

2.3.5 Rights of Way

86. There are no ROWs located on the proposed critical habitat designation. Wyoming State Highway 135, a paved road located west of the proposed designation, and Cedar Rim Road, a BLM maintained gravel road located north of the proposed designation, contain multiple ROWs, including ROWs for a power line, telephone line, snowfence and gas pipeline. These ROWs generally follow State Highway 135, the old roadbed of State Highway 135 before it was realigned, or the Cedar Rim Road, and allow certain maintenance and surface disturbing activity within the ROW. Authorized activities are not new actions nor located within the proposed designation, therefore, the BLM expects no consultations with the Service for activities occurring within the existing ROWs during the next ten years.[73]

Future Consultations

87. While utility and transportation systems (snowfences, pipelines, gas lines, power lines, telephone lines, communication towers, etc.) will be located to make use of existing ROW corridors whenever possible, the BLM anticipates initiating one informal consultation with the Service during the next ten years for a new ROW located near the boundaries of the proposed critical habitat area. It is likely a BA would be required because of dust, pesticide, weed and other concerns.[74] Using the administration costs for a high level informal consultation and the BLM's actual cost for the current BA results in a total administration cost estimate for this section 7 consultation of $15,000; $3,000 in Service costs, $4,000 in BLM costs and $8,000 in third party costs.[75]

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[72]Personal communication with Fred Georgeson (Geologist), BLM Lander Field Office, January 17, 2003.

[73]BLM Lander Field Office visit, January 10, 2003. Personal communication with Connie Breckenridge (Wildlife Biologist/GIS Coordinator), BLM Lander Field Office, January 17, 2003.

[74]BLM Lander Field Office visit, January 10, 2003. Personal communication with Connie Breckenridge (Wildlife Biologist/GIS Coordinator), BLM Lander Field Office, January 17, 2003.

[75]See Exhibit 2.

2.3.6 Mining

88. According to the BLM, the proposed critical habitat designation has a high potential for the occurrence of uranium and a moderate potential for the occurrence of zeolites.[76] While the Beaver Rim area is known to contain deposits of these minerals, there are no uranium load claims or zeolite placer claims located on or within five miles of the proposed critical habitat area. Extensive exploration for uranium last occurred in the township encompassing the proposed designation in the 1970s, and there were uranium load claims on the designation at one time, but these load claims were abandoned sometime before December 21, 1979.[77]

89. While the current mining regulations provide protection for listed species and their habitat, the BLM considers the "casual use" allowance in the regulations a risk to the Yermo population and its habitat.[78,79] Because of this, the BLM Wyoming Office is pursuing withdrawal of the proposed critical habitat designation from locatable mineral development (entry, prospecting, location, exploration, and development) to protect the species and its habitat.[80] The withdrawal should take place within the next year or two.[81]

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[76]There are no common variety minerals (sand, sand, gravel, shale, borrow and pumice) of value on the proposed critical habitat designation. Phosphates, if any, are located too deep and the grade too low to be economically extracted. Personal communication with Fred Georgeson (Geologist), BLM Lander Field Office, January 17, 2003.

[77]All load claims were required by be registered with the BLM by December 21, 1979. Personal communication with Fred Georgeson (Geologist), BLM Lander Field Office, January 17, 2003.

[78]"The following performance standards apply to your notice or plan of operations:...(6) The operator shall take action as may be needed to prevent adverse impacts to threatened or endangered species, and their habitat which may be affected by operations." 43 CFR § 3809.420(6)

[79]An operator need not notify BLM if their operations are classified as casual use. "Casual use means activities ordinarily resulting in no or negligible disturbance of the public lands or resources. For example - (1) Casual use generally includes the collection of geochemical, rock, soil, or mineral specimens using hand tools; hand panning; or non-motorized sluicing. It may include use of small portable suction dredges. It also generally includes use of metal detectors, gold spears and other battery-operated devices for sensing the presence of minerals, and hand and battery-operated drywashers. Operators may use motorized vehicles for casual use activities provided the use is consistent with the regulations governing such use (part 8340 of this title), off-road vehicle use designations contained in BLM land-use plans, and the terms of temporary closures ordered by BLM." 43 CFR § 3809.5(1).

[80]The BLM temporarily withdrew the Yermo site, and several thousand acres surrounding the site, from locatable mineral development in 1999, but this expired after two years.

[81]Personal communication with Fred Georgeson (Geologist), BLM Lander Field Office, January 17, 2003. Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

Future Consultations

90. The BLM plans to informally consult with the Service on the withdrawal of the proposed critical habitat area from locatable mineral development. While this is considered an informal consultation, it will be part of the current formal programmatic consultation assessing whether management decisions in the RMP affect Yermo. Therefore, the withdrawal results in no additional administrative consultation costs.[82]

91. The withdrawal does remove the proposed critical habitat area from future locatable mineral development, and this lost opportunity is a cost to society. While there is no evidence to determine the technical and economic viability of uranium or zeolite extraction from the proposed designation, or to estimate the characteristics of the uranium or zeolite resources, the fact that there are no active load or placer claims on the proposed designation supports a marginal value for the uranium and zeolite resources at the Yermo site. In addition, the extraction of potential uranium and zeolite resources is not economic in the current price environment. It has not been economic to mine uranium during the past two decades and it is unlikely to be in the near future.[83] Therefore, the value of the lost opportunity to society is considered minimal and is not quantified in this analysis.

2.3.7 Recreation

92. The BLM allows access to its lands for public recreation. The most common activities that attract users to the area are hunting (primarily antelope, sage grouse and other upland birds), rock collecting, wild horse viewing, and general site seeing. Such activities have been allowed in the past and are likely to continued to be allowed in the future. Vehicle access for these activities is limited to the existing road network, including established two-tracks, by the RMP, and the proposed designation shows no particular evidence of ORV activity other than traffic on the existing two-track.[84] Therefore, these recreational activities are considered a limited threat to Yermo and its proposed critical habitat. Furthermore, there is no Federal nexus that ties the recreational use activities to the BLM (action agency), therefore, there will be no consultation with the Service for recreational use activities during the next ten years.[85]

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[82]Personal communication with Jeff Carroll (Wildlife Biologist and Threatened & Endangered Species Coordinator), BLM Wyoming State Office, January 17, 2003.

[83]Personal communication with Fred Georgeson (Geologist), BLM Lander Field Office, January 17, 2003.

[84]"ORV use in the remainder of the resource area [including the proposed critical habitat designation] will be limited to existing roads and vehicle routs, except for the performance of necessary tasks (work requiring the use of a motor vehicle). Examples include picking up big game kills, repairing range improvements, managing livestock, mineral activities where surface disturbance does not total more than 5 acres as described in the '5-acre exemption' under the 43 CFR 3809 regulations, etc." Lander RMP Record of Decision (1987), pg. 9.

[85]Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, January 16, 2003.

93. Special recreation permits (SRPs) are authorizations which allow specified recreational uses of the public lands and related waters. They are issued as a means to manage visitor use, and protect natural and cultural resources. Types of recreational uses that may require an SRP are commercial use (recreational use of public lands for business or financial gain, such as hunting/fishing outfitters, mountain bike tours, horseback riding, etc.), competitive use (any organized, sanctioned, structure use or events in which two or more contestants compete, such as mountain bike races, ORV races, horse endurance rides, etc.), and organized group activities and events (noncommercial/noncompetitive activities and events, such as large Boy Scout campouts, large group trekking, large family reunions, etc.).[86]

94. The BLM is required to consult with the Service on each SRP application in proposed critical habitat. The BLM has not received SRP requests for recreational activities on the proposed designation in the past, and the BLM does not anticipate any SRP requests for recreational activities on the proposed designation during the next ten years.[87]

2.3.8 Road Construction and Maintenance

95. Wyoming State Highway 135 (from mile post 27 to mile post 30), a secondary road, is located downslope of the proposed critical habitat designation. The highway is located outside the proposed designation, and runs as close as 0.25 miles to the boundary of the proposed designation. During the next ten years, the Wyoming Department of Transportation (WYDOT) anticipates resurfacing this section of the highway (in 2010) and conducting regular maintenance activities along the shoulder of the road. Because these activities will be conducted within the existing ROW, and because secondary roads do not usually involve Federal funding, there is no Federal nexus.[88] Therefore, there will be no consultation with the Service for road construction and maintenance activities during the next ten years.[89]

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[86]Communication from Ray Hanson (Outdoor Recreation Planner) to Jack Kelly (Field Manager), BLM Lander Field Office, January 21, 2003.

[87]BLM Lander Field Office visit, January 10, 2003. Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, January 16, 2003.

[88]The typical Federal nexuses for road construction and maintenance activities are either funding from the Federal Highway Administration for projects and/or Clean Water Act section 404 permitting from the Army Corps of Engineers for projects with the potential to discharge dredge or fill material into navigable waters of the United States.

[89]Personal communication with Jim Meyers (Resident Engineer), WYDOT Lander District Office, January 16, 2003.

2.3.9 Landownership Adjustments

96. As detailed in the Lander RMP, the proposed critical habitat designation does not occur within tracts of land considered for exchange or sale and, therefore, would not be directly affected by any changes in landownership within the Beaver Creek Management Unit during the next ten years.[90]

2.3.10 Wild Horse Management

97. The proposed critical habitat area is encompassed by the Dishpan Butte Wild Horse Herd Area. While the proposed designation is used by wild horses for roaming and grazing, it is not identified by the BLM as an area of animal concentration. The BLM has never conducted roundup operations within the proposed designation, and the BLM does not plan on using the proposed designation for roundup activities during the next ten years.[91]

2.4 Total Economic Cost Associated with Land Use Activities

98. Exhibit 3 provides estimates of section 7-related costs associated with land use activities affecting proposed critical habitat for Yermo. During the next ten years, the Service and BLM anticipate eight section 7 consultations; three formal and five informal. The total cost estimate for these consultations ranges from $533,000 to $629,000; $61,000 for informal consultations, $100,000 to $140,000 for formal consultations and $372,000 to $428,000 for project modifications.[92] Of this total, the Service is responsible for $27,000, the BLM (Action agency) $93,000 to $133,000, and third parties $413,000 to $469,000.[93] Consultation costs associated with oil and gas development account for more than 70 percent of the total cost estimate, followed by consultation costs associated with the Lander RMP ranging from 15 to 20 percent and consultation costs associated with grazing, geophysical oil and gas exploration and ROWs at approximately three percent apiece. There are no section 7 consultation costs associated with mining, recreation, road construction and maintenance, land ownership adjustments and wild horse management activities.

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[90]BLM Lander Field Office visit, January 10, 2003. Lander RMP Final Environmental Impact Statement (1986), pg. 36.

[91]BLM Lander Field Office visit, January 10, 2003. Personal communication with Jack Kelly (Field Manager), BLM Lander Field Office, January 16, 2003.

[92]Totals in this section may not sum in due to rounding.

[93]Third party costs break down to approximately $389,000 to $445,000 for oil and gas development and $8,000 each for grazing, geophysical oil and gas exploration and ROWs. Assuming the two anticipated oil and gas wells occur on separate leases, the cost to each lessee is approximately $186,000 to $214,000 apiece. With seven permittees, grazing costs break down to approximately $1,000 per permittee.

2.5 Present Value of Total Economic Cost Associated with Land Use Activities

99. Exhibit 4 presents the present value of these section 7 related costs.[94] The present value total cost estimate for the eight section 7 consultations ranges from $310,000 to $523,000; $32,000 to $54,000 for informal consultations, $89,000 to $131,000 for formal consultations and $189,000 to $338,000 for project modifications. Of this total, the Service is responsible for $21,000 to $25,000, the BLM $76,000 to $124,000, and third parties $213,000 to $375,000.[95] Consultation costs associated with oil and gas development account for approximately 65 to 70 percent of the present value total cost estimate, followed by consultation costs associated with the Lander RMP at approximately 22 to 24 percent and consultation costs associated with grazing, geophysical oil and gas exploration and ROWs at two to five percent apiece. The total annualized costs range from $44,000 to $75,000 per year.

[94]The costs have been converted to present values using a seven percent discount rate.

[95]The present value of third party costs breaks down to approximately $197,000 to $351,000 for oil and gas development, 8,000 for grazing and $4,000 to $8,000 each for geophysical oil and gas exploration and ROWs. Assuming the two anticipated oil and gas wells occur on separate leases, the present value cost to each lessee is approximately $99,000 to $176,000. With seven permittees, the present value of grazing costs breaks down to approximately $1,000 per permittee.

Exhibit 3

TOTAL ESTIMATED ECONOMIC COSTS ASSOCIATED WITH POTENTIAL ADMINISTRATIVE REQUIREMENTS AND PROJECT MODIFICATIONS FOR LAND USE ACTIVITIES FOR YERMO, ROUNDED TO NEAREST $1,000 (TEN YEARS)

Activity	Future Consultations (Formal/ Informal)	Informal Consultation Costs	Formal Consultation Costs	Project Modification Costs	Total Costs
Lander RMP	2/0	$0	$85,000 to $125,000	$0	$85,000 to $125,000
Rights of way	0/1	$15,000	$0	$0	$15,000
Mining	0/1	$0	$0	$0	$0
Grazing	1/0	$0	$15,000	$0	$15,000
Geophysical exploration	0/1	$15,000	$0	$0	$15,000
Oil and gas development	0/2	$31,000	$0	$372,000 to $428,000	$403,000 to $459,000
Recreation	0/0	$0	$0	$0	$0
Road construction and maintenance	0/0	$0	$0	$0	$0
Landownership adjustments	0/0	$0	$0	$0	$0
Wild horse management	0/0	$0	$0	$0	$0
Total	**3/5**	**$61,000**	**$100,000 to $140,000**	**$372,000 to $428,000**	**$533,000 to $629,000**

Source: Based on personal communication with USFWS Biologist, BLM and WYDOT personnel, Stuart Garmaker (President of Cyanostar), and Doug Thompson (Meyers Land and Cattle Co. and Fremont County Commissioner).

Exhibit 4

PRESENT VALUE OF ESTIMATED ECONOMIC COSTS ASSOCIATED WITH POTENTIAL ADMINISTRATIVE REQUIREMENTS AND PROJECT MODIFICATIONS FOR LAND USE ACTIVITIES FOR YERMO, ROUNDED TO NEAREST $1,000 (TEN YEARS)

Activity	Future Consultations (Formal/ Informal)	Present Value Informal Consultation Costs	Present Value Formal Consultation Costs	Present Value Project Modification Costs	Present Value Total Costs
Lander RMP	2/0	$0	$75,000 to $117,000	$0	$75,000 to $117,000
Rights of way	0/1	$8,000 to $15,000	$0	$0	$8,000 to $15,000
Mining	0/1	$0	$0	$0	$0
Grazing	1/0	$0	$14,000	$0	$14,000
Geophysical exploration	0/1	$8,000 to $15,000	$0	$0	$8,000 to $15,000
Oil and gas development	0/2	$16,000 to $24,000	$0	$189,000 to $338,000	$205,000 to $362,000
Recreation	0/0	$0	$0	$0	$0
Road construction and maintenance	0/0	$0	$0	$0	$0
Landownership adjustments	0/0	$0	$0	$0	$0
Wild horse management	0/0	$0	$0	$0	$0
Present Value Total	**3/5**	**$32,000 to $54,000**	**$89,000 to $131,000**	**$189,000 to $338,000**	**$310,000 to $523,000**
Total Annualized Costs					**$44,000 to $75,000**

Note: This table presents the present value of costs based on a seven percent discount rate. Costs may not sum due to rounding.
Source: Exhibit 3.

2.6 Potential Impacts to Small Businesses

100. Under the Regulatory Flexibility Act (as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).[96] However, no regulatory flexibility analysis is required if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.[97] SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities.

101. While SBREFA requires a comparison of the number of affected small businesses to the number of small businesses in "the industry," the statute does not specify a geographic limit. Except where noted, this analysis interprets this to mean the industry within all counties potentially affected by (i.e., that are home to) the critical habitat designation. Accordingly, the following represents a screening level analysis of the potential effects of section 7 on small entities to assist the Secretary in making this certification.

102. This analysis identified small businesses in the oil and gas extraction, cattle ranching and geophysical oil and gas exploration industries as potentially being affected by section 7 protection for Yermo.[98] Because oil and gas extraction and geophysical oil and gas exploration companies that operate in Fremont County are typically headquartered outside the State, the relevant area for these two industries for this screening level analysis is the United States.[99]

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[96] 5 U.S.C. § 601 *et. seq.*

[97] Thus, for a regulatory flexibility analysis to be required, impacts must exceed a threshold for "significant impact" **and** a threshold for a "substantial number of small entities." See 5 U.S.C. § 605(b).

[98] Third parties are not involved in the BLM's Lander RMP review and revision or the BLM's withdrawal of the proposed critical habitat area from locatable mineral development (i.e., only the Action agency and the Service are expected to be involved). Therefore, all costs associated with these consultations will be borne solely by the Service and the BLM, which do not qualify as small business entities. While third parties may be involved in a consultation with the Service for a ROW located near the proposed designation, the BLM does not know which industry (gas distribution pipeline, power transmission line, telephone line, communication tower, etc.) will initiate the consultation. Due to this uncertainty, the small business impacts for this activity cannot be calculated. However, with only one consultation in ten years, and a third party cost of $8,275, it is believed the small business impacts will be minimal.

[99] The lessees of the leases that encompass the proposed designation are headquartered in Tulsa, Oklahoma, as is the permittee for the well recently drilled west of the proposed designation. The majority of the oil and gas leases and APDs in Fremont County, and Wyoming as a whole, are held by oil and gas companies headquartered outside Wyoming (e.g., Denver, Colorado, Oklahoma City and Tulsa, Oklahoma, Houston and Midland, Texas, etc.). Geophysical oil and gas exploration companies who conduct exploration activities in Fremont County, and Wyoming as a whole, are also typically located outside of Wyoming (e.g., California, Oklahoma, Texas, Colorado, and even Canada). Personal

103. To be conservative, (i.e., more likely to overstate impacts than understate them), this analysis assumes that a unique entity will undertake each of the projected consultations in a given year, and so the number of businesses affected is equal to the total annual number of consultations (both formal and informal).[100] Furthermore, because there are so few consultations for each industry (two for oil and gas extraction, seven[101] for grazing, and one for geophysical oil and gas exploration), this screening level analysis assumes all the consultations for an industry will occur in one year. Treating consultations in this manner results in a more meaningful screening level analysis since the specific business participating in a section 7 consultation for Yermo will do so in only one year in ten, and incur the costs during that year and not over a ten year period.

104. As illustrated in Exhibit 5, the estimated number of small businesses in the oil and gas extraction and geophysical oil and gas exploration industries in the study area affected by section 7 protection for Yermo is less than 1.0 percent per industry per annum. Furthermore, by counting the seven ranchers involved in the single grazing consultation separately, this analysis estimates that 13 percent of small businesses in the cattle ranching industry are affected by section 7 protection for Yermo annually. However, the seven ranchers involved in the single consultation will share the work and cost of the consultation, and the cost per rancher is only about $1,000.[102] These calculations reflect conservative assumptions and conclude a significant economic impact on a substantial number of small entities will not result from section 7 protection for Yermo.

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communication with Fred Georgeson (Geologist), BLM Lander Field Office, February 12, 2003.

[100]While it is possible that the same business could consult more than once, it is unlikely to do so during the one-year time frame addressed in this analysis. However, should such multiple consultations occur, they would concentrate effects of the designation on fewer entities. In such a case, the approach outlined here would overstate the number of affected businesses.

[101]While this analysis estimates that one consultation is likely to occur within the proposed critical habitat area during the next ten years for grazing activities, seven ranchers will participate in this consultation.

[102]Third party administrative costs of a consultation are approximately $8,000. See Exhibit 2.

Exhibit 5

ESTIMATED ANNUAL NUMBER OF SMALL BUSINESSES AFFECTED BY SECTION 7: THE "SUBSTANTIAL" TEST

Industry	Oil and Gas Extraction SIC 1382	Cattle Ranching SIC 0212	Geophysical Oil & Gas Exploration SIC 1311
Annual number of affected businesses in industry	2	7	1
Total number of all businesses in industry within study area	10,697	55	7,166
Number of small businesses in industry within study area	8,308	51	6,408
Percent of businesses that are small (Number of small businesses)/(Total number of businesses)	78%	93%	89%
Annual number of small businesses affected (Number of affected businesses)*(Percent of small businesses)	1.6	6.5	0.9
Annual percentage of small businesses affected (Number of small businesses affected)/(Total number of small businesses	**0.02%**	**12.76%**	**0.01%**

Source: SBA Search for NAICS/SIC Information, accessed at: https://eweb1.sba.gov/naics/dsp_naicssearch2.cfm Dialog File 516: D&B - Duns Market Identifiers 2002/Nov. (COPR 2002 D&B).

105. The basis for this calculation is as follows:[103]

- Estimate the number of businesses within the study area affected by section 7 implementation annually (except for cattle ranching, where seven ranchers will participate in one single consultation, this is assumed to be equal to the number of annual consultations);

- Calculate the percent of businesses in the affected industry that are likely to be small (the relevant area for oil and gas extraction and geophysical oil and gas exploration business is national, while it is Fremont County for cattle ranching);

- Calculate the number of affected small businesses in the affected industry;

- Calculate the percent of small businesses likely to be affected by section 7 implementation in proposed critical habitat.

[103]Note that because these values represent the probability that small businesses will be affected during a one-year time period, calculations may result in fractions of businesses. This is an acceptable result, as these values represent the probability that small businesses will be affected by section 7 implementation of the Act.

2.7 Potential Impacts to the Energy Industry

106. Pursuant to Executive Order No. 13211, "Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use," issued May 18, 2001, Federal agencies must prepare and submit a "Statement of Energy Effects" for all "significant energy actions." The purpose of this requirement is to ensure that all Federal agencies "appropriately weigh and consider the effects of the Federal Government's regulations on the supply, distribution, and use of energy."[104] The Office of Management and Budget has provided guidance for implementing this executive order that outlines nine outcomes that may constitute "a significant adverse effect" when compared without the regulatory action under consideration:

- Reductions in crude oil supply in excess of 10,000 barrels per day (bbls);
- Reductions in fuel production in excess of 4,000 barrels per day;
- Reductions in coal production in excess of 5 million tons per year;
- Reductions in natural gas production in excess of 25 million Mcf per year;
- Reductions in electricity production in excess of 1 billion kilowatts per year or in excess of 500 megawatts of installed capacity;
- Increases in energy use required by the regulatory action that exceed the thresholds above;
- Increases in the cost of energy production in excess of one percent;
- Increases in the cost of energy distribution in excess of one percent; or
- Other similarly adverse outcomes.[105]

107. Two of these criteria are relevant to this analysis: 1) potential reductions in crude supply in excess of 10,000 barrels per day; and 2) potential reductions in natural gas production in excess of 25 million Mcf per year.

108. Exhibit 6 analyzes whether the energy industry, and specifically, oil and gas producers are likely to experience "a significant adverse effect" as a result of section 7 implementation for Yermo.

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[104] Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, Guidance For Implementing E.O. 13211, M-01-27, Office of Management and Budget, July 13, 2001, http://www.whitehouse.gov/omb/memoranda/m01-27.html

[105] Ibid.

Exhibit 6

FREMONT COUNTY OIL AND GAS PRODUCTION (ANNUAL)

Year	Producing Wells	Oil			Natural Gas		
		Bbls	Bbls/day	Average daily production, Bbls/well	Gas Mcf	Gas Million Mcf (MMcf)	Average annual production, MMcf/well
1997	853	2,852,883	7,816	9.2	76,761,793	76.8	0.09
1998	884	2,825,849	7,742	8.8	81,588,146	81.6	0.09
1999	898	2,796,132	7,661	8.5	110,255,474	110.3	0.12
2000	1,297	3,282,857	8,994	6.9	133,651,909	133.7	0.10
2001	1,377	3,308,545	9,065	6.6	141,845,894	141.8	0.10

Source: Wyoming Oil and Gas Statistics, available at: http://wogcc.state.wy.us

- Based on historic well production records, Fremont County produces less than 10 bbls of crude oil per well on a daily basis.[106] Therefore, should section 7 implementation cause the lessees to abandon the future development of the two wells, it is highly unlikely that crude oil supply will drop by more than the threshold of 10,000 bbls per day.

- Based on historic well production records, Fremont County produces approximately 0.10 million Mcf of natural gas per well annually.[107] Therefore, should section 7 implementation cause the lessees to abandon the future development of the two wells, it is highly unlikely that natural gas production will drop by more than the threshold of 25 million Mcf per year.

109. As Exhibit 6 illustrates, the energy industry will not experience a "significant adverse effect."

[106] In 2001, 1,377 wells produced 3,308,454 bbls of crude oil, 9,065 bbls per day, in Fremont County, or an average of 6.6 bbls per well on a daily basis. Source: Wyoming Oil and Gas Statistics, available at: http://wogcc.state.wy.us

[107] In 2001, 1,377 wells produced 141,845,894 Mcf of natural gas in Fremont County, or an average of 0.10 million Mcf per well per annum. Source: Wyoming Oil and Gas Statistics, available at: http://wogcc.state.wy.us

3. SECTION 7 BENEFITS

110. The published economics literature has documented that real social welfare benefits can result from the conservation and recovery of endangered and threatened species (Bishop (1978, 1980), Brookshire and Eubanks (1983), Boyle and Bishop (1986), Hageman (1985), Samples *et al*. (1986), Stoll and Johnson (1984). Such benefits have also been ascribed to preservation of open space and biodiversity, both of which are associated with species conservation (see examples in Pearce and Moran (1994) and Fausold and Lilieholm (1999)). Likewise, regional economies and communities can benefit from the preservation of healthy populations of endangered and threatened species, and the habitat on which these species depend (ECONorthwest [2002]).

111. However, a purpose of the Act is to provide for the conservation of endangered and threatened species. Thus, the benefits of actions taken under the Act are primarily measured in terms of the value placed by the public on species preservation (e.g., avoidance of extinction, and/or an increase in a species' population). Such social welfare values may reflect both use and non-use (i.e., existence) values. For example, use values might include the opportunity to see Yermo while on a hike, or the recreational use of habitat area preserved as a result of Yermo. Non-use values are not derived from direct use of the species, but instead reflect the utility the public derives from knowledge that a species continues to exist.

112. In addition, as a result of actions taken to preserve endangered and threatened species, various other benefits may accrue to the public. Such benefits may be a direct result of modifications to projects made following section 7 consultation, or may be collateral to such actions.

113. The benefits to Yermo from section 7 protection are expected to be modest: (1) the proposed critical habitat designation is small, containing only 360 acres of federally-owned land; (2) the baseline protective measures currently afforded to Yermo result in modest project modifications; (3) the expected project modifications protect only Yermo, to protect other species would require a much larger land area; (4) the expected project modifications do not reduce the activity, only move it a short distance away, outside the boundaries of the proposed designation; and (5) the expected project modifications do not include other activities that enhance value (e.g., the creation of substitute habitat, the restoration of existing habitat, the preservation of open space, etc.).

114. A number of published studies have demonstrated that the public holds values for endangered and threatened species separate and distinct from any expected direct use of these species (i.e., a willingness to pay to simply assure that a species will continue to exist). These studies include Boyle and Bishop (1987), Elkstrand and Loomis (1998), Kotchen and Reiling (2000), and Loomis and White (1996). While the public's willingness to pay for preservation and enhancement of a wide-range of species has been studied, no studies have

specifically addressed the non-use values associated with Yermo or closely related species. Thus, it is not possible to develop a monetary measure of this category of benefit.

115. Additional benefits of section 7 protection may include educational/informational benefits (i.e., increased awareness by the public of the extent of Yermo habitat), increased support for existing conservation efforts, and reduced uncertainty regarding the extent of Yermo habitat. For example, critical habitat designation will provide a firm legal definition of the extent of Yermo habitat.

116. As discussed above, it is not feasible to fully describe and accurately monetize the benefits of section 7 in the context of this economic analysis. The discussion presented in this report provides insight into the potential benefits of section 7 protection based on information obtained in the course of developing the economic analysis. It is not intended to provide a complete analysis of the benefits that could result from section 7 of the Act. Given these limitations, the Service believes that the benefits of section 7 are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.

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